

REMARKS/ARGUMENTS

Specification has been amended to include dimensions of the substrate from the related application 10/052,452, filed 10/25/2001 (Page 13, paragraph starting in line 3).

Claims 1-3, and 10-23 remain in this application. Claims 4-9 are withdrawn. Claim 10 is canceled. Claims 11-23 are newly added.

Claims are amended to incorporate the examiner's suggestions and to remove informalities. Claims are further amended to consistently use --microfluidic device-- in all claims, and to distinctly specify which microfluidic device is being used in each step.

Claims 1-3 have been amended to particularly point out and distinctly claim the subject matter for the invention. The body of claim 1 is amended to recite the steps of analysis.

Claims 11-23³ add additional features of the invention from Specification and the applications incorporated by reference. Claim 11 adds a feature from the specification (page 11, lines 4-5). Claim 12 adds a feature from application 10/052,452, incorporated in the current application by reference. Claim 13 adds a feature from Example 1 of current application. Claim 14 adds a feature from Specification (page 5, lines 13-14). Claim 15 adds a feature from the specification (page 11, lines 4-5). Claim 16 adds a feature from application 10/052,452, incorporated in the current application by reference. Claim 17 adds a feature from application 10/052,452, incorporated in the current application by reference. Claim 18 adds a feature from application 10/052,452, incorporated in the current application by reference. Claim 19 is derived from Specification (page 8, paragraph starting with line 18 as amended in the current amendment, dated 06/30/2005). Claim 20 adds a feature from Specification (page 9, lines 4-6). Claim 21 adds a feature from application 10/052,452, incorporated in the current application by

reference (Specification, page 17, lines 11-13). Claim 22 is derived from Specification (page 10, paragraph starting in line 18). The single base-pair extension in Genetic Bit Analysis is catalyzed by an enzyme, DNA Polymerase. Claim 23 is derived from Specification (page 8, paragraph starting with line 18 as amended in the current amendment, dated 06/30/2005).

As to rejection of claims as being unpatentable over Liu, 6,533,914, in view of Briscoe et al., 6,544,734, and further in view of Mehta et al., 6,632,655, the applicant submits the following. Liu teaches a method for transferring liquid samples among multiple microfluidic chips. Briscoe et al describe the use of beads to transfer coupled reagents. However, my invention is distinct from use of beads in microfluidic devices. A bead cannot be used to create an array of molecules of two or more chemical species in distinct and known regions of the substrate. Use of beads as described by Briscoe et al and Mehta et al consists of random capture of molecules of one or more chemical species. When multiple chemical species are captured on bead surface, it is impossible to know the location of molecules of each chemical species. Different beads can be used for each chemical species to provide exact location of the molecules; however, in that case, the molecules of two or more chemical species are not present on each substrate, as claimed in this application. Moreover, the beads used by Briscoe et al. are spherical with a diameter preferably in the range of 2.8 to 5 microns (Column 3, line 67). The preferred substrate for my invention is elongated wherein the part of the substrate bearing the array of molecules is between one millimeter and ten centimeter long and has a cross-sectional dimension of between ten micrometer and ten millimeters. It is in fact intent of the invention to provide a better method to perform biomolecular analysis than practicable with beads or other microparticles.

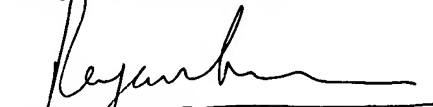
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As to rejection of claims as being unpatentable over Vann, 6,635,470 and Anderson et al., 6,713,309, applicant respectfully submits that the amended claim 1, which includes a substrate wherein an array of molecules of two or more chemical species is deposited on distinct and known regions of the substrate, is not disclosed or anticipated by either Vann or Anderson et al. Claims 2-3 derive from base claim 1 and are therefore, not disclosed or anticipated by either Vann or Anderson et al.

In view of the examiner's earlier restriction requirement, applicant retains the right to present claims 4-9 in a divisional application.

Applicant respectfully requests further examination of the claims.

Respectfully submitted



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